



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,564	06/19/2006	Shinichi Uda	1422-0721PUS1	8975

2292 7590 05/13/2009  
BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
----------

HUHN, RICHARD A

ART UNIT	PAPER NUMBER
----------	--------------

1796

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

05/13/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,564	<b>Applicant(s)</b> UDA ET AL.	
	<b>Examiner</b> RICHARD A. HUHN	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Any rejections and/or objections made in the previous Office Action and not repeated below, are hereby withdrawn.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The new grounds of rejection set forth below for claims 1-3 are necessitated by Applicant's amendment filed on 18 March 2009. In particular, claim 1 has been amended to contain the limitation "without the presence of the phosphorous-containing compound in the first step". The newly amended claims were not present at the time of the preceding action. For this reason, the present action is properly made final.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 1796

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application No. H09-012613 (herein "Ito"). A computer-generated English translation of Ito was provided with the previous Office Action, and is referred to herein.

7. As to claim 1: Ito discloses a process of preparing a water-absorbent resin (see line 2 of claim 1). The method includes a reverse-phase suspension polymerization (see line 1 of claim 1, and an example at paragraphs 64-66), which takes place in multiple steps (a first polymerization is disclosed towards the end of paragraph 65, and a second polymerization is disclosed towards the end of paragraph 66). The process includes the addition of a phosphorous-containing compound to the second step (see "hypophosphorous acid soda hydrates", meaning sodium phosphinate hydrate, at the 5<sup>th</sup> line of paragraph 66).

8. Ito fails to disclose a process in which the first polymerization step is conducted without the phosphorous-containing compound, as is presently recited. However, Ito discloses that the phosphorous-containing compound is used as a chain transfer agent (see, for example, the last sentence of paragraph 64). It is within the level of ordinary skill in the art to control the addition of chain transfer agent. Furthermore, a person of ordinary skill would know that the amount of a polar chain transfer agent (such as a phosphorous acid salt) influences the hydrophilicity of the polymer. Therefore, a person of ordinary skill would be motivated to modify the addition of the chain transfer agent to

Art Unit: 1796

achieve a polymer with desired hydrophilicity. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have added less chain transfer agent to achieve a less hydrophilic polymer, including excluding the chain transfer agent from the first polymerization step, thereby arriving at the presently claimed invention.

9. As to claim 2: The referenced phosphorous-containing compound, sodium phosphinate, is an hypophosphorous acid (phosphinic acid) compound.

10. As to claim 3: The referenced example includes 1.0 mmol of sodium phosphinate hydrate and 1.6 mol of acrylic acid monomer, corresponding to 0.00064 mol of sodium phosphinate per 1 mol of water soluble ethylenically unsaturated monomer.

### ***Response to Amendment***

11. The amendment of claim 1 to include the limitation “without the presence of the phosphorous-containing compound in the first step” which has support from paragraph 26 of the specification is acknowledged.

### ***Response to Arguments***

12. Applicant's arguments filed on 18 March 2009 have been fully considered, but they are not persuasive.

Art Unit: 1796

13. Applicant argues (page 6 of Remarks) that the addition of a phosphorous containing compound to only the second polymerization step results in the unexpected result of a decreased water absorption rate. However, it is noted that the data regarding the unexpected results as presented in the Remarks and the 132 affidavit is not commensurate in scope with instant claim 1. Claim 1 recites a much broader category of "water-soluble ethylenically unsaturated monomer[s]", whereas the present data is drawn only to the specific ethylenically unsaturated monomer acrylic acid. Because there is no evidence that this allegedly unexpected result with regards to water absorption is illustrative of the broader category of monomers which are claimed, there is insufficient evidence to ascertain the unexpected nature of the water absorbability of all of the resins which the instant claims read upon.

14. Furthermore, as applied above in paragraph 8, a person of ordinary skill would know that the amount of a polar chain transfer agent influences the hydrophilicity of the polymer, and would therefore be motivated to modify the addition of the chain transfer agent to achieve a polymer with desired hydrophilicity. Therefore, the examiner believes that the presently recited results are not, in fact, unexpected based upon the applied prior art and common knowledge in the art.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP §

Art Unit: 1796

706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

16. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. This action is a final rejection and is intended to close the prosecution of this application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an appeal to the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

18. If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee.

19. If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the application which otherwise might not be proper may be admitted upon a showing

Art Unit: 1796

a good and sufficient reasons why they are necessary and why they were not presented earlier.

20. A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the application will become abandoned.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD A. HUHNS whose telephone number is (571) 270-7345. The examiner can normally be reached on Monday to Friday, 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. A. H./  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796